IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF DELAWARE

SONY CORPORATION,	)	
	)	
Plaintiff,	)	
	)	
v.	)	Civ. No. 15-288-SLR
	)	
PACE PLC and PACE AMERICAS, LLC,	)	
	)	
Defendants.	)	

MEMORANDUM ORDER

At Wilmington this 24th day of October, 2016, having heard argument on, and having reviewed the papers submitted in connection with, the parties' proposed claim construction;

IT IS ORDERED that the disputed claim language of U.S. Patent Nos. 6,097,676 ("the '676 patent"); 6,084,643 ("the '643 patent"); 7,733,295 ("the '295 patent"); 6,467,093 ("the '093 patent"); 8,032,919 ("the '919 patent"); and RE38,898 ("the '898 patent") shall be construed consistent with the tenets of claim construction set forth by the United States Court of Appeals for the Federal Circuit in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005), as follows:

Equivalents

1. The parties have agreed to the construction of a number of terms under 35 U.S.C. § 112, ¶ 6.[1] (*See* D.I. 122, ex. B) The parties disagree as to whether the corresponding structures should include the description "and equivalents thereof." (*See, e.g.*, D.I. 122, ex. B-1 at 1) The relevant patents and claims are: '676 patent, claims 5 and 8 ("storing means" and "reproducing means"); '643 patent, claim 1 ("command receiving means," "control means," and "storage means"); '093 patent, claim 1 ("broadcast program extraction means"); and '919 patent, claims 1 and 5 ("broadcast program extraction means"). (D.I. 122, ex. B) According to section 112, paragraph 6 of the Patent Act:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification **and equivalents thereof**.

35 U.S.C. § 112, ¶ 6 (2006) (emphasis added); *see also Mettler-Toledo, Inc. v. B-Tek Scales, LLC*, 671 F.3d 1291, 1296 (Fed. Cir. 2012). The parties already agree on the application of § 112, ¶ 6; therefore, for these disputed claim terms in the patents-in-suit, the structure shall include the phrase "and equivalents thereof."

The '676 Patent

2. **Preamble, claim 5:** The preamble to claim 5 is limiting. "In general, a preamble is limiting if it is necessary to give life, meaning, and vitality to the claim." *Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1357 (Fed. Cir. 2012) (internal citations and quotation marks omitted). The preamble to claim 5 recites:

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[1] The patents-in-suit have priority dates before March 16, 2013 and do not appear to contain matter claimed after that date; therefore pre-AIA section 112 applies.

> An information reproducing device for reproducing an information recording medium in which audio data of plural channels are multiplexedly recorded, the information reproducing device comprising:

('676 patent, 13:27-31) Here, the preamble to claim 5 explains that the purpose of the "information reproducing device" is to "reproduce[e] an information recording medium." The "recording medium" is not discussed in the body of the claim, and the presence of the term in the preamble is necessary to give meaning to the claim. The "reproducing means" must reproduce something, and without "an information recording medium," there is nothing for the "reproducing means" to reproduce. Additionally, the preamble provides antecedent basis for the terms "audio data," "plural channels," and "multiplexedly recorded" and gives meaning to the claim by explaining that "the audio data" is "multiplexedly recorded" on the "information recording medium" in "plural channels." Also, the parties have agreed that the preamble to claim 8 is limiting. The preamble of claim 8 is similar to that of claim 5 and includes the additional language "codes representing kinds of said audio data," which similarly provides antecedent basis for "the codes" used in the body of claim 8. ('676 patent, 14:3) For these reasons, the preamble to claim 5 is limiting.

3. **Reading means for reading the codes representing the kinds of audio data:**[2] "Controller 13 and encoder 4 as shown in figure 7 of the patent, and equivalents thereof." The parties agree that § 112, ¶6 applies and also agree on the function. Figure 7 depicts the "third preferred embodiment" with respect to three applications: "movie, karaoke or music." ('676 patent, 7:55; 9:31) Claim 8 addresses the potential for reproducing "multiplexedly recorded" audio data that "may be translated into different languages for various countries." ('676 patent, 10:62-63) The different languages "may be correspondingly identified by identifiers . . . [such as the] numbers 0, 1, 2 and 3

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[2] Found in claim 8 of the '676 patent.

[which] correspond to English, French, German and Japanese, respectively."[3] ('676 patent, 10:64-67; fig. 15) The "kinds of audio data" discussed in claim 8 describes the language into which the audio is "multiplexedly recorded." Step S33 in the associated method instructs one to "read the number of multiplex sound and language kind data from track header." ('676 patent, fig. 16) The "track header portion" is depicted in fig. 8, and the specification explains that "the **controller 13 reads** the track header from the **output from the decoder 4** and **reads** the number of multiplex sound and language data (step S33)."[4] ('676 patent, 11:17-20) (emphasis added) According to the specification, two structures are involved: decoder 4 outputs the track header and the multiplexed audio, and controller 13 reads the "track header portion" which contains "the codes representing the kinds of the audio data." The patentee chose to disclose a single embodiment with respect to claim 8; therefore, the "reading means" in claim 8 is limited to controller 13 and decoder 4, and equivalents thereof.

The '643 Patent

4. **Transmission signal receiving means for receiving transmission signals including a plurality of channels:**[5] "A front end including a satellite tuner, and equivalents thereof." The parties agree that § 112, ¶6 applies and also agree on the function. The specification describes applications of "digital television broadcasting

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[3] In describing the "third preferred embodiment," the '676 specification interchangeably uses the terms "code" and "identifier number" to refer to numbers used to identify "predetermined" attributes and that may be found in "the TOC information recording portion, the track header portion, the multiplex header portion or the packet header portion." ('676 patent, 9:26-34)

[4] The parties argued that the "reading means" in claim 8 was described by one or more encoders in Figure 7 of the '676 specification. (*See* D.I. 88 at 4-5; D.I. 95 at 4-6) In this specific embodiment associated with different languages of audio data "multiplexedly recorded" on the medium, the specification identifies the structure that performs this function.

[5] Found in claim 8 of the '643 patent.

using a satellite" and "digital television broadcasting in which pictures and sounds are transmitted in a compressed format." ('643 patent, 1:25-30) Figure 1 depicts a preferred embodiment of the "AV (Audio Visual) system," which

> is composed of a **parabolic antenna** 1 for receiving a radio wave transmitted from a transmitter not illustrated **through a satellite** (broadcasting satellite or communications satellite), an IRD (integrated receiver/Decoder) 2 for decoding signals received by the parabolic antenna 1, and a television receiver 3.

('643 patent, 2:46-51) (emphasis added) The IRD "receives a message transmitted through a **satellite**." ('643 patent, 3:10-11) (emphasis added) Figures 3A and 3B show "an inner construction of the IRD 2. An RF signal fed out from an LNB (Low Noise Block downconverter) 1a of the **parabolic antenna** 1 enters a tuner 21 of a front end 20 to be demodulated." ('643 patent, 3:28-31) (emphasis added) In the '643 patent, the patentee discloses a single embodiment involving a parabolic antenna receiving a signal from a satellite; therefore, the structure associated with a "transmission signal receiving means for receiving transmission signals including a plurality of channels" is a front end including a satellite tuner, and equivalents thereof.

5. **Channel number display control means:**[6] "Performs the function of switching channel numbers being displayed in the predetermined order. The associated structure is a CPU[7] and MPEG[8] decoder with on screen display (OSD) functionality, and equivalents thereof."[9] The specification discloses that the receiving equipment is

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[6] Found in claim 1 of the '643 patent.

[7] Central Processing Unit. ('643 patent, 4:28)

[8] Moving Picture Experts Group ("MPEG") coding schema are used to compress video and audio for digital storage, transmission, and delivery.

[9] Defendants argued that this language in the claim is indefinite, because it lacks punctuation and, therefore, can be interpreted in three different ways, requiring three potentially different structures. (D.I. 95 at 7-8) The court disagrees. The disputed term in claim 1 follows a claim limitation reciting "command receiving means for receiving a command from a channel selection key operated by a user." ('643 patent, claim 1) The

provided with "**a channel number display control means that**, in accordance with the command commanding to switch the channels received by the command receiving means in a predetermined order, **switches channel numbers in the predetermined order**."[10] ('643 patent, 1:48-52) (emphasis added) Meanwhile, the CPU and MPEG decoder work together to display channel numbers on the television screen:

> [T]he CPU 29 controls the MPEG video decoder 25, when an OSD (On-Screen Display) data is desired to be generated. The MPEG video decoder 25 generates an OSD data in accordance with the control by the CPU 29, writes the OSD data in the DRAM 25a, and reads out the data to send out. Thereby, specific characters, graphics, pictures (for example, characters, symbols, icons, and screens that are superimposed on usual picture images) can appropriately be sent out to the television receiver 30 to be displayed.

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claim describes a structure that receives a channel selection command from the user, leaving little room for the interpretation of the disputed language in claim 1. Moreover, the specification refers to the "channel number display control means that . . . switches channel numbers in the predetermined order." ('643 patent, 1:48-52) While defendants assert that the disputed language is difficult to understand, "[a] claim is not 'indefinite' simply because it is hard to understand when viewed without benefit of the specification." *S3 Inc. v. NVIDIA Corp.*, 259 F.3d 1364, 1369 (Fed. Cir. 2001)

[10] Defendants argued that, while plaintiff's construction in claim 1 suggests that the channel number display control means only switches channel numbers and not the channels themselves, claim 2 recites that the "channel number display control means switches the channels." (D.I. 108 at 5) According to defendants, "channel number display control means" in claim 2 would require an associated structure with additional elements (namely a "transmission signal receiving means") beyond the elements in the structure specified by the same functional term in claim 1. (D.I. 108 at 6) Claim 2 is described in the specification as an alternative embodiment, "[i]n the foregoing construction, the channel number display control means **may** switch the channels in the magnitude order of the channel numbers." ('643 patent, 1:61-63) (emphasis added) The requirements for definiteness under § 112, ¶6 are for the specification to disclose a corresponding structure that performs the function in the claim, and while "[a]lternative embodiments may disclose different corresponding structure, [] **the claim is valid even if only one embodiment discloses corresponding structure**." *Cardiac Pacemakers, Inc. v. St. Jude Med., Inc.*, 296 F.3d 1106, 1113–14 (Fed. Cir. 2002) (emphasis added). Here, the specification identifies corresponding structure to perform the function described in claim 1 with respect to "display control means," therefore, claim 1 is not indefinite.

('643 patent, 5:10-18) The CPU and MPEG decoder also operate in conjunction to control the display of the electronic program guide ("EPG"), which is similarly "superimposed on usual program pictures." ('643 patent, 6:49-55)

The '295 Patent

6. **Display device or display apparatus.**[11] "A communication device capable of displaying video programs and Internet content." For example, "[t]he display apparatus is a portable liquid crystal display for viewing video programs and browsing the internet." ('295 patent, Abstract) Video programs are discussed in the specification:

> The base apparatus 200 can compress data, such as a video signal and/or an audio signal from a television program, a communication network, and/ or a satellite broadcast received by the set-top box 300. The compressed-data is formed-into a transmission signal and transmitted to the display apparatus 100.
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> The display-apparatus 100 receives and demodulates the transmission signal from the base apparatus 200, extracts a video signal from the demodulated transmission signal and displays the video signal on the LCD 107. Further, the display apparatus 100 extracts an audio signal from the demodulated transmission signal and outputs the audio signal to a speaker (not shown).

('295 patent, 5:4-16) Internet access is also described: "[T]he user can use the display apparatus 100 to view a website on the Internet through the modem of the base apparatus 200, and receive and transmit electronic mail (e-mail)." ('295 patent, 6:7-9)

7. **Transmit said information signal to said display device:**[12] "Transmit said information signal directly or indirectly to said display device." For example, data is "formed-into a transmission signal and transmitted to the display apparatus." ('295 patent, 5:7-8) Additionally, the video and audio signals of a television broadcast signal

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[11] Found in claim 2 of the '295 patent. The parties agree that "said display apparatus" should be construed to mean "said display device." (D.I. 122, Ex. B at 7)

[12] Found in claim 2 of the '295 patent.

are "wirelessly transmitted to the display apparatus." ('295 patent, 14:39-40) The specification also provides detail explaining wireless transmission:

> The transmission signal formation section 208 forms a transmission signal in conformity with a predetermined communication protocol. As described hereinabove, the base apparatus 200 in the present embodiment forms a transmission signal in conformity with, for example, the IEEE (Institute Electrical and Electronics Engineers) 802.11 system.[13]

('295 patent, 11:15-20) Reception by the display apparatus is also similarly discussed as potentially employing a communications protocol such as IEEE 802.11. ('295 patent, 6:62-7:5) At the time of filing, the IEEE 802.11 specification supported both direct ("ad hoc") connections between peer devices, and indirect ("infrastructure") communications between devices through access points and other intermediate network infrastructure. (D.I. 102, Ex. G at 25-26)

The '093 Patent

8. **Program:**[14] "Video and/or audio." The specification discusses that "the demultiplexer extracts from the transport stream a compressed video signal and a compressed audio signal of a program." (Abstract) In the background art, a "target television broadcast program" is extracted from the transport stream and decompressed into "an analog output video signal" and "an analog output audio signal." ('093 patent, 1:24-27) This is cited as a key limitation of the art, because "it is not possible to record on the MD only digital audio signals of a target music program or an education program concerning, for example, English conversation." ('093 patent, 2:3-6) Defendants argued that "program" requires both "video and corresponding audio" and then relies on a dictionary definition that defines a program as "[a] scheduled radio or television show." (*See* D.I. 95 at 17; D.I. 97, ex. A at 5) The potential for a program to include a radio

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[13] The IEEE 802.11 specification is generally known as "WiFi."

[14] Found in claims 1 and 8 of the '093 patent.

show indicates that a program is not limited to both video and audio. The specification makes a similar distinction between a "television broadcast program," which includes video and audio content, and "music program[s]" or "education program[s]" that may only incorporate audio content. Elsewhere, the specification provides numerous examples in which audio-only program content may be reproduced. (*See* '093 patent, 11:53-60; 13:56-64; 14:4-59)

9. **Broadcast program:**[15] "Video and/or audio received from a source external to the apparatus that transmits for multiple receiving devices." The patent broadly relates to "digital broadcast signals, for example, digital satellite broadcast signals." ('093 patent, 1:7-8) Defendants argued that "broadcast" means "to transmit a program to all receiving devices," and that a broadcast program must be transmitted "to **all available** receiving devices." (*See* D.I. 95 at 18; D.I. 122, ex. A-4 at 2) (emphasis added) One of the dictionary definitions provided by defendants required that

> [a] radio[16] or television broadcast (noun) is a program that is transmitted over airwaves for public reception by **anyone with a receiver tuned to the right signal channel**.

(D.I. 97, ex. B at 3) (emphasis added) While this definition may adequately describe analog television and radio broadcasting, it does not address digital broadcasting, signal scrambling, multiplexed signals, or compression technologies such as MPEG encoding as described in the specification. Instead, the specification describes numerous examples that run contrary to defendants' proposed definition, because a user must do more than tune a receiver to the "right signal channel." For example, the user must

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[15] Found in claims 1 and 8 of the '093 patent.

[16] Defendants also argued that its construction of "program" means that "broadcast program" should require both video and corresponding audio. (D.I. 95 at 17-18) In support of this argument, defendants provide another dictionary definition that includes both radio and television. (D.I. 97, ex. B at 3) For the same reasons as above with respect to "program," "broadcast program" includes video and/or audio.

select the signal (carrier) **and** one of the multiplexed broadcast programs: "a user selects a carrier **including the multiplexed television broadcast program** that the user would like to audio-visually observe." ('093 patent, 1:18-20) (emphasis added) Tuning in to the "right signal channel" is also insufficient because, as the specification explains, the user requires equipment, including a "receiving antenna" in the 12 GHz band and a "digital broadcast receiving apparatus." ('093 patent, 1:32; 6:6) Furthermore, the specification describes situations where being able to receive the signal is insufficient, because the signal may be "scrambled for limited reception, such as for pay broadcasting." ('093 patent, 7:19-21) The satellite carrier signal is delivered to a wide geographic area, and those users with the appropriate devices, a subscription to the satellite service, and a receiving device tuned to select a specific broadcast program from the multiplex signal may receive the specific broadcast program. For these reasons, "broadcast program" encompasses video and/or audio received from a source external to the apparatus that transmits for multiple receiving devices.

10. **Decompression means for decompressing the compressed data extracted by said broadcast program extraction means and for outputting decompressed data:**[17] The parties agree that § 112, ¶ 6 applies. "The 'decompression means' performs the function of decompressing the compressed data extracted by said broadcast program extraction means and for outputting decompressed data. The structure is an MPEG decoder, and equivalents thereof." The specification discloses that the extracted broadcast program[18] exits the demultiplexer 132 and enters the MPEG decoder 141. (*See* '093 patent, 8:36-40; fig. 4) In the next step,

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[17] Found in claim 1 of the '093 patent.

[18] "[T]he MPEG-compressed video signal V and the MPEG-compressed audio signal A of the program selected by the user are extracted." ('093 patent, 8:31-35; fig. 2)

> the MPEG decoder 141 **decompresses** the MPEG-compressed video signal and the MPEG-compressed audio signal supplied from the demultiplexer 132. That is, the MPEG decoder 141 performs MPEG decoding.

('093 patent, 8:53-56) (emphasis added) In the specification, the patentee identified the structure as an MPEG decoder, therefore, the structure associated with "decompressing means" is an MPEG decoder, and equivalents thereof.

11. **Digital interface means for receiving the compressed data extracted by said broadcast program extraction means and the decompressed data from said decompression means, and for outputting each of the compressed data and the decompressed data to a digital external unit:**[19] The parties agree that § 112, ¶ 6 applies. "The 'digital interface means' performs the function of receiving the compressed data extracted by said broadcast program extraction means[20] and the decompressed data from said decompression means, and outputting each of the compressed data and the decompressed data to a digital external unit. The structure is a digital interface, and equivalents thereof."[21] Figure 1 depicts a structure – digital

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[19] Found in claim 1 of the '093 patent.

[20] The parties agree that the "broadcast program extraction means" performs the function of extracting from said broadcast program signals compressed data including a broadcast program selected and specified by a user. As discussed herein, the associated structure is a tuner, front-end unit, and demultiplexer, and equivalents thereof. (*See* D.I. 122, ex. B-4 at 1)

[21] The parties agreed that the specification identifies a structure named "digital interface," and the parties each paraphrased the claim language to describe the function performed by the "digital interface means." (D.I. 95 at 22; D.I. 88 at 21-22) Defendants argued that "[a] 'digital interface' is not by itself sufficient structure" and, therefore, is indefinite. (D.I. 95 at 22) "Structure disclosed in the specification qualifies as 'corresponding structure' if the intrinsic evidence clearly links or associates that structure to the function recited in the claim." *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1352 (Fed. Cir. 2015) (citing *Noah Sys., Inc. v. Intuit Inc.*, 675 F.3d 1302, 1311 (Fed.Cir.2012)). A means-plus-functions clause is indefinite "if a person of ordinary skill in the art would be unable to recognize the structure in the specification and associate it with the corresponding function in the claim." *Id.* Here, there is no dispute that the "digital interface" is associated with the function of the claim. The specification

interface 20 – that accepts signals from both the transport unit 13 and the MPEG decoder 141. (*See also* '093 patent, figs. 4 and 5 (arrows pointing to digital interface 20)) In claim 1, the "digital interface means" receives compressed data from the "broadcast program extraction means," but the figures show a "transport unit 13." The transport unit 13 includes demultiplexer[22] 132, which processes the transport stream from descrambler 131. (*Id.*, fig. 1) The relationship between the descrambler, the transport unit, and the front-end unit is described in the specification:

> The front end unit 12 transmits to the transport unit 13 the transport stream output obtained by demodulating and error correcting the signal. In the transport stream output, the signal is, in most cases, scrambled for limited reception, such as for pay broadcasting.[23]
>
> The transport unit 13 has, as shown in FIG. 1, a descrambler 131, a demultiplexer 132, and a DRAM 133 used as a work area for performing demultiplex processing. The transport stream output from the front end unit 12 is supplied to the descrambler 131 of the transport unit 13. The transport stream signal is descrambled by the descrambler 131.

('093 patent, 7:17-27) Descrambler 131 is not included in the parties' construction of the structure associated with "broadcast program extraction means," but descrambler

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describes, in great detail (over nine columns and four figures of the specification) how to use the digital interface in conjunction with the IEEE 1394 specification, as well as how to configure the "digital interface" in order to output broadcast program data to specific digital external units as identified in the first and second embodiments. (*See* '093 patent, 9:10-18-11; figs. 5-8) Defendants' expert, Dr. Schonfeld, acknowledged in his declaration that "[t]he specification describes in some instances the above functionality as being performed by a 'digital interface.'" (D.I. 96 at ¶ 66) While Dr. Schonfeld's cursory reading of the '093 patent uncovered a handful of lines linking structure to function (9:10-21; 9:31-38; 9:40-45; 14:25-44), even these few lines overcome the "sufficient structure" test under *Williamson*. For this reason, defendants have failed to demonstrate that a person of ordinary skill in the art would be unable to recognize the "digital interface" in the specification and associate it with the function corresponding to "digital interface means" in the claim.

[22] The demultiplexer is an element of the structure associated with "broadcast program extraction means."

[23] This language indicates that the descrambler may be an optional component.

131 is located between two elements of the associated structure – front-end unit 12 and demultiplexer 132. Also, descrambler 131 outputs a transport stream signal "which consists of a plurality of multiplexed programs, [and which] is supplied to the demultiplexer 132." ('093 patent, 7:49-51)

Given the parties' construction, the descrambler is not a required component of the structure associated with the "broadcast program extraction means." The transport stream is within the structure associated with "broadcast program extraction means when it "is also supplied to the digital interface 20 in order to provide it to digital external units." ('093 patent, 7:50-52) The relation between the output of the MPEG decoder (the structure associated with "decompression means") and the digital interface is shown and described in the specification. ('093 patent, figs. 1, 4 and 5, items 141 and 20; 9:7-9; 10:45-49) For these reasons, the structure associated with "digital interface means" is a digital interface, and equivalents thereof.

12. **Control means for controlling, based on an instruction from the user, the selection of an output from said digital interface means to said digital external unit, said output being selected from the compressed data extracted by said broadcast program extraction means and the decompressed data from said decompression means:**[24] The parties agree that § 112, ¶ 6 applies and agree on the function, but disagree on the structure. "The function is: controlling, based on an instruction from the user, the selection of an output from said digital interface means to said digital external unit, said output being selected from the compressed data extracted by said broadcast program extraction means and the decompressed data from said decompression means. The structure is a controller, including a processor and

[24] Found in claim 1 of the '093 patent.

memory, implementing an algorithm as described in the specification at 12:49-13:11 and 16:22-17:23, and equivalents thereof." Plaintiff proposed that the structure is

> a controller, including a processor and memory, implementing an algorithm as described in the specification at 12:49-13:11 and 16:22-17:23, and equivalents thereof.

(D.I. 122, ex. A-4 at 2) Defendants proposed that the structure is

> a processor implementing the algorithm described in 12:47-13:43 and 16:22-17:23.

The algorithm that describes the function associated with "control means" begins at 12:49 of the '093 specification and ends at 13:11;[25] the algorithm is discussed further at 16:22-17:23.[26] The specification identifies, in the algorithm disclosed in figure 6 and discussed in the specification at 12:49-13:11, that the controller 30 is the structure that performs the function. Elsewhere in the specification:

> The controller 30 serves as a microcomputer having a central processing unit (CPU) 32, a dynamic random access memory (DRAM) 33, a program read only memory (program ROM) 34, and a Japanese Character (Kanji) ROM 35, all of which are connected via a bus 31, and controls the individual elements of the receiving apparatus 3.

('093 patent, 6:20-26)

13. **Decompressing the compressed data to form decompressed data:**[27]

"Decompressing compressed data that represents the video and/or audio of the program selected by the user to form decompressed data that represents the video and/or audio of the program selected by the user." The construction here, and the only

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[25] Defendants asserted that the algorithm at 13:12-43 describes a situation "when information is to be reproduced from digital data by a digital external unit and output to the receiving apparatus 3." ('093 patent, 13:16-18) This is an algorithm for data traveling from the digital external unit **into** the digital interface for processing within the receiving apparatus – the claim does not discuss this function.

[26] The parties agree as to this location. (D.I. 122, ex. A-4 at 2)

[27] Found in claim 8 of the '093 patent.

disagreement between the parties, is dependent on the court's construction of the term "program" as discussed above.

The '919 Patent[28]

14. **Decompression means for decompressing the compressed program extracted by the broadcast program extraction means and for outputting decompressed data:**[29] The parties agree that § 112, ¶ 6 applies. "The function is decompressing the compressed program extracted by the broadcast program extraction means and outputting decompressed data. The structure is an MPEG decoder, and equivalents thereof." The parties disagreed on function, which is dependent on the court's interpretation of "program" in the '093 patent to include video and/or audio. The parties also disagreed on structure, which is dependent on the court's inclusion of equivalents.

15. **Digital interface means for receiving the compressed program extracted by the broadcast program extraction means and the decompressed data from said decompression means, and for outputting each of the compressed program and the decompressed data to a digital external unit:**[30] The parties agree that § 112, ¶ 6 applies. "The 'digital interface means' performs the function of receiving the compressed data extracted by the broadcast program extraction means and the decompressed data from said decompression means, and outputting each of the compressed data and the decompressed data to a digital external unit. The structure is a digital interface, and equivalents thereof."[31]

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[28] The '919 patent is a continuation of the '093 patent and, therefore, shares a common specification with the '093 patent.

[29] Found in claims 1 and 6 of the '919 patent.

[30] Found in claim 1 of the '919 patent.

[31] For the same reasons discussed above with respect to the '093 patent.

16. **Control means for controlling, based on an instruction from the user, the selection of an output from said digital interface means to said digital external unit, said output being selected from the compressed data extracted by said broadcast program extraction means and the decompressed data from said decompression means:**[32] The parties agree that § 112, ¶ 6 applies and agree on the function, but disagree on the structure. "The function is: controlling, based on an instruction from the user, the selection of an output from said digital interface means to the digital external unit, the output being selected from the compressed program extracted by the broadcast program extraction means and the decompressed data from the decompression means. The structure is a controller, including a processor and memory, implementing an algorithm as described in the specification at 12:40-13:2 and 16:9-17:9, and equivalents thereof."[33]

17. **Program:**[34] "Video and/or audio."[35]

18. **Broadcast program:**[36] "Video and/or audio received from a source external to the apparatus that transmits for multiple receiving devices."[37]

19. **Decompressing the compressed program extracted during the step of extracting and outputting decompressed data:**[38] "Decompressing compressed program that represents the video and/or audio of the program selected by the user and outputting decompressed data that represents the video and/or audio of the program

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[32] Found in claims 1 and 8 of the '919 patent.

[33] For the same reasons discussed above with respect to the '093 patent.

[34] Found in claims 1 and 9 of the '919 patent.

[35] For the same reasons discussed above with respect to the '093 patent.

[36] Found in claims 1 and 9 of the '919 patent.

[37] For the same reasons discussed above with respect to the '093 patent.

[38] Found in claim 9 of the '919 patent.

selected by the user." The construction here, and the only disagreement between the parties, is dependent on the court's construction of the term "program" as discussed above with respect to the '093 patent.

The '898 Patent

20. **Controller for executing an authentication procedure between the apparatus and another device via a data bus:**[39] "A processor or circuit within the apparatus that determines whether another device is authorized to receive the encrypted signal by transmitting and receiving signals on the data bus."[40] The court adopts plaintiff's construction.[41] Claim 41 addresses receiving a scrambled compressed

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[39] Found in claim 41 of the '898 patent.

[40] Defendants argued that § 112, ¶ 6 applies, because a controller is a generic piece of hardware and/or software. (D.I. 95 at 25-26) Defendants also proposed a function and a structure. (D.I. 122, ex. A-6 at 1) Under *Williamson*,

> [t]he standard is whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure. When a claim term lacks the word "means," the presumption can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to recite sufficiently definite structure or else recites function without reciting sufficient structure for performing that function. The converse presumption remains unaffected: use of the word "means" creates a presumption that § 112, ¶ 6 applies.

Williamson v. Citrix Online, LLC, 792 F.3d 1339, 1349 (Fed. Cir. 2015) (citations omitted) (internal quotation marks omitted) The claim language does not employ the word "means," and the presumption is that § 112, ¶ 6 does not apply. Defendants can overcome this presumption by demonstrating that the claim term fails to recite a sufficiently definite structure. Here, defendants have identified and proposed a structure, and for this reason has failed to overcome the presumption, therefore § 112, ¶ 6 does not apply, and the court adopts plaintiff's construction.

[41] Defendants argued that "[b]ecause the 'controller . . .' terms only 'recite[] function without reciting sufficient structure **for performing that function**,' they are subject to 35 U.S.C. § 112(6)." *Adv. Aerospace Tech., Inc. v. U.S.*, 122 Fed. Cl. 445, 477 (2015)." (D.I. 95 at 25) The court was unable to find this language, or support for the claimed proposition, in the referenced case.

signal and transmitting the encrypted signal to an authenticated device over a data bus. This application is discussed with respect to the "second broadcast display mode."

> The display device (not shown in FIG. 1) reads the address on data bus 24, recognizes the address as its own, and reads the accompanying display command from data bus 24. The display device processes the display command to generate an ACK signal and transmits an address of receiver 21 along with the ACK signal to data bus 24. The address and ACK signal supplied by the display device are received by controller 34 via I/O port 33.
>
> Controller 34 retrieves a security key from memory 35 and generates a KEYCMD signal as a function of the display command and the retrieved security key. The KEYCMD signal is then compared to the received ACK signal. **If the ACK signal is equal to the KEYCMD signal**, then controller 34 transmits an address corresponding to the display device to data bus 24. Controller 34 also issues a switch command to switch 32, causing it to close, and an I/O port control signal to I/O port 33, causing it to couple switch 32 with data bus 24. Descrambled video signal transmitted from descrambler 31 propagates through switch 32 and I/O port 33 to data bus 24.

('898 patent, 6:58-7:10) (emphasis added) The controller authenticates the display device using a security key stored in memory.

21. **A controller for executing an authentication procedure via said data bus between said apparatus and another device connected to said data bus, and for controlling said reproducing circuit and encryptor:**[42] "A processor or circuit within the apparatus that determines whether another device is authorized to receive the encrypted signal by transmitting and receiving signals on the data bus, and directs the reproducing circuit and encryptor to provide the encrypted signal."[43] Claim 47

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[42] Found in claim 47 of the '898 patent.

[43] Defendants argued that § 112, ¶ 6 applies and that the function is "executing an authentication procedure via said data bus between said apparatus and another device connected to said data bus, and for controlling said reproducing circuit and encryptor." (D.I. 122, ex. A-6 at 1) Defendants further argued that the structure is indefinite. (*Id.*) The claim language does not employ the word "means," and the presumption is that § 112, ¶ 6 does not apply. *Williamson* 792 F.3d at 1349. Defendants can overcome this presumption by demonstrating that the claim term fails to recite a sufficiently definite

addresses reproducing and encrypting a signal stored on a recording medium, and transmitting the encrypted signal to an authenticated device over a data bus. This application is discussed with respect to the "playback mode of operation," which is discussed in detail at 16:1 to 17:15 of the '898 patent. In the specification, controller 134 as referenced in figure 5 works together with the attached devices to perform the steps identified in claim 47 by performing authentication steps and communicating with devices over the bus. ('898 patent, 16:38-55) The claim term recites a sufficiently definite structure, controller 134, therefore, § 112, ¶ 6 does not apply, and the court adopts plaintiff's claim construction.

22. **Data bus:**[44] "Wired data communication path." The court adopts plaintiff's proposed construction. Defendants proposed "a common pathway that a device uses to transmit data to **multiple receiving devices**." The specification says otherwise: "Such a video data communication system is comprised of a receiver 25, a data bus 24, **and one or more peripheral devices**." ('898 patent, 12:5-9) (emphasis added) For these reasons, "data bus" is a wired data communication path.

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structure. *Id.* The structure, however, is described in the specification, and § 112, ¶ 6 does not apply. Alternatively, under § 112, ¶ 2, "[a] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). The parties agree that controller 134 performs the authentication procedure. (D.I. 95 at 29) Controller 134 also controls the reproducing circuit and encryptor by issuing a playback command when "controller 134 initially issues an address corresponding to device 27, controller 144B reads and recognizes the address, reads the accompanying **playback command**." ('898 patent, 16:39-42) (emphasis added) While controller 134 is not in a device with a reproducing circuit, it may control the reproducing circuit and encryptor in recording/reproducing device 23 by issuing a **command** to controller 144B. A person having skill in the art reading this language in the claim, specification, and prosecution history could, with reasonable certainty, understand the scope of the invention.

[44] Found in claims 41, 42, 47, and 48 of the '898 patent.

23. The court has provided a construction in quotes for the claim limitations at issue. The parties are expected to present the claim construction consistently with any explanation or clarification herein provided by the court, even if such language is not included within the quotes.

United States District Judge